

- (a) applying a mesomorphous film of a metal complex on a surface of the substrate;
- (b) exposing, in a first atmosphere, a first area, having a first shape, of said film to a particle beam to cause said metal complex in said first area to undergo a transformation into a first metal-containing material adherent to said substrate and one or more ligand byproducts of a first kind at least some proportion of which are driven off during the course of said transformation;
- (c) optionally driving off an unreacted amount of said metal complex and a remainder of said one or more ligand byproducts of a first kind that are not driven off during the course of said transformation;
- (d) exposing, in a second atmosphere, a second area of said film, having a second shape, adjacent to said first area, to electromagnetic radiation of a wavelength suitable to cause said metal complex in said second area to undergo a photo-chemical reaction, said reaction transforming said metal complex in said second area into a second metal containing material adherent to said substrate and one or more ligand byproducts of a second kind at least some proportion of which are driven off during the course of said photochemical reaction; and optionally
- (e) driving off an unreacted amount of said metal complex and a remainder of said one or more ligand byproducts of a second kind that are not driven off during the course of said photochemical reaction.